

Claims

What is claimed is:

- 1. A method for detecting and measuring photoluminescence comprising:
 - a) Light source for excitation**
 - b) Sample holder cell with integral light pipes.**
 - c) Emission photosensor****
- 2. A method according to claim 1, where the light source for excitation is in the wavelength range from 180nm to 1050nm.**
- 3. A method according to claim 1, wherein the light pipes of the sample holder with integral light pipes are comprised of fiber optic material.**
- 4. A method according to claim 3, wherein the cross-sectional distance of the light entrance of the integral light pipe is in the range from 25 micrometers to 3mm diameter.**
- 5. A method according to claim 1, wherein a lens focuses the light source onto the excitation light pipe.**
- 6. A method according to claim 1, wherein a lens focuses the light emitted from the emission light pipe onto a photosensor.**
- 7. A method according to claim 1, wherein the sample being examined is a solid sample.**
- 8. A method according to claim 1 wherein the sample being examined is in a gaseous state.**
- 9. A method according to claim 1, wherein the sample being examined is in a liquid state.**
- 10. A method according to claim 1, wherein the integral light pipes are 100 micrometers**

to 100 meters in length.

11. A method according to claim 1, wherein the body of the sample cell holder is comprised of a material which absorbs the wavelengths being used for either excitation or emission.

12. A method according to claim 1, wherein the light source is a light emitting diode.

13. A method according to claim 1, wherein an optical wavelength filter is between light source and sample holder.

14. A method according to claim 1, wherein an optical wavelength filter is between the emission light pipe and the photosensor.

15. A method according to claim 1, wherein the output of the emission optical fiber is the input of a spectrometer.

16. A method according to claim 1, wherein the light source is a monochromator.

17. A method according to claim 1, wherein only one optical path is a light pipe.